

6        a client node, adapted to receive an allocated nodal maximum bandwidth from the  
7        administrator node, and further adapted to determine current values of a  
8        set of variables related to bandwidth usage by the one or more processes at  
9        the client node and to communicate the current values to the administrator  
10      node, wherein the administrator node utilizes the current values to adjust  
11      the allocated nodal maximum bandwidths for the one or more nodes.

1        6.      (New) The computer network of claim 5, wherein the one or more  
2        processes include a teleconference.

1        7.      (New) The computer network of claim 5, wherein the one or more  
2        processes include a broadcasting process.

1        8.      (New) The computer network of claim 5, wherein the one or more  
2        processes include a video serving process.

1        9.      (New) The computer network of claim 5, wherein the allocated nodal  
2        maximum bandwidth for each node is shared by all program elements at the node.

1        10.     (New) The computer network of claim 5, wherein the allocated nodal  
2        maximum bandwidth for each node is shared by program elements at the node associated  
3        with a predetermined class of processes.

1        11.     (New) The computer network of claim 10, wherein the predetermined  
2        class of processes comprises the one or more processes involving transmission of large  
3        amounts of data.

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1        12. (New) The computer network of claim 5, wherein the administrator node  
2        is adapted to allocate nodal maximum bandwidths for all nodes of the network.

1        13. (New) The computer network of claim 5, wherein the nodal maximum  
2        bandwidths are determined based on participation of the respective nodes in the one or  
3        more processes involving transmission of large amounts of data.

1        14. (New) The computer network of claim 5, wherein the set of variables  
2        related to bandwidth usage by the one or more processes involving transmission of large  
3        amounts of data comprises:

4                   at least one variable indicating an actual usage of bandwidth at a node by the one  
5                   or more processes; and  
6                   one or more variables related to a predicted usage of bandwidth at a node by the  
7                   one or more processes in the immediate future.

1        15. (New) The computer network of claim 14, wherein the one or more  
2        variables related to the predicted usage of bandwidth comprises:  
3        a number of active processes at the node that are capable of transmitting data; and  
4        a number of active connections on the node, wherein each connection requires a  
5        separate copy of data being transmitted.

16. (New) The computer network of claim 5, wherein the client node is  
further adapted to calculate a nodal happiness factor based on the set of variables related  
to bandwidth usage by the one or more processes and on the allocated nodal maximum  
bandwidth.

1       17. (New) The computer network of claim 5, wherein the client node  
2       publishes the current values of the set of variables related to bandwidth usage at the client  
3       node to be accessed by all nodes of the network.

1       18. (New) The computer network of claim 5, wherein:  
2       the client node is further adapted to assign portions of the allocated nodal  
3       maximum bandwidth among program elements at the client node, such  
4       that the total of the assigned portions is not greater than the allocated  
5       maximum bandwidth.

6       19. (New) The computer network of claim 18, wherein the client node  
7       periodically calls a monitoring program for:  
8       exchanging information with each program element; and  
9       updating variables indicating an actual usage and a predicted usage of bandwidth  
10      by each program element.

11      20. (New) The computer network of claim 19, wherein the monitoring  
12      program comprises:  
13      one or more function sets which, if manipulated by a node other than the  
14      administrator node, render the monitoring program unusable.

15      21. (New) The computer network of claim 19, wherein the monitoring  
16      program comprises:  
17      a hacker variable which indicates whether or not any node other than the  
18      administrator node has attempted to turn off the monitoring program.

1       22. (New) The computer network of claim 18, wherein the client node  
2       periodically calls a bandwidth allocation program for assigning portions of the allocated  
3       nodal maximum bandwidth among program elements.

4       23. (New) The computer network of claim 22, wherein the bandwidth  
5       allocation program is for:

6       determining a priority and a maximum and minimum requested bandwidth for  
7       each program element; and  
8       in order of priority, assigning to each program element the minimum requested  
9       bandwidth, until the allocated nodal maximum bandwidth is used up; and  
10      if the allocated nodal maximum bandwidth is not used up by the assigning of  
11      minimum requested bandwidths, assigning additional bandwidth to each  
12      program element in order of priority.

1       24. (New) The computer network of claim 18, wherein the client node  
2       periodically calls a happiness query program that determines a happiness factor of each  
3       program element.

4       25. (New) The computer network of claim 24, wherein the happiness factor  
5       of a program element is an average score of happiness over all connections to which the  
6       program element is transmitting data.

7       26. (New) The computer network of claim 24, wherein the happiness factor  
8       of each program element can be visually displayed using color coding.

9           27. (New) The computer network of claim 24, wherein the happiness factor  
10       of each program element is published to be accessed by all nodes of the network.

11           28. (New) A computer readable medium for administering one or more  
12       processes involving transmission of large amounts of data in a computer network, the  
13       computer readable medium comprising:

14           an administrator program, executable on the computer network for allocating  
15       nodal maximum bandwidths for one or more nodes of the network and  
16       communicating to the one or more nodes the respective allocated nodal  
17       maximum bandwidths; and  
18           a client program, executable on the computer network for receiving an allocated  
19       nodal maximum bandwidth from the administrator program, and further  
20       for determining current values of a set of variables related to bandwidth  
21       usage by the one or more processes at the client node and communicating  
22       the current values to the administrator program, wherein the administrator  
23       program utilizes the current values to adjust the allocated nodal maximum  
24       bandwidths for the one or more nodes.

1           29. (New) The computer readable medium of claim 28, wherein:  
2       the client program is further for assigning portions of the allocated nodal  
3       maximum bandwidth among program elements at a client node, such that  
4       the total of the assigned portions is not greater than the allocated  
5       maximum bandwidth.

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1       30. (New) The computer readable medium of claim 28, wherein the client  
2       program further comprises:

3       a monitoring program for exchanging information with each program element and  
4       updating variables indicating an actual usage and a predicted usage of  
5       bandwidth by each program element.

1       31. (New) The computer readable medium of claim 28, wherein the client  
2       program further comprises a bandwidth allocation program for:

3       determining a priority and a maximum and minimum requested bandwidth for  
4       each program element;  
5       in order of priority, assigning to each program element the minimum requested  
6       bandwidth until the allocated nodal maximum bandwidth is used up; and  
7       if the allocated nodal maximum bandwidth is not used up by the assigning of  
8       minimum requested bandwidths, assigning additional bandwidth to each  
9       program element in order of priority.

1       32. (New) The computer readable medium of claim 28, wherein the client  
2       program further comprises:

3       a happiness query program for determining a happiness factor of each program  
4       element, wherein the happiness factor of a program element is an average score of  
5       happiness over all connections through which the program element is transmitting data.

6       33. (New) The computer readable medium of claim 32, wherein the happiness  
7       query program is further for:

AI 8      visually displaying the happiness factor of each program element using color  
could 9      coding; and  
10      publishing the happiness factor of each program element at a node to be accessed  
11      by all nodes of the network.

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